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Climatic changes in the deep Norwegian Coastal waters and Skagerrak 2000 - 2005 in relation to previous decades.

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Climatic conditions in the deep Norwegian costal water, from Skagerrak to the Barents Sea, are to a large degree influenced by the Atlantic water. The seasonal variations are also much less than in the upper layer. Temperature and salinity are observed on a regular basis at a set of nine stations from Torungen (Skagerrak) to Ingøy (Finnmark) This takes place two or four times a month from surface to the bottom. The Torungen - Hirthals hydrographic section in the Skagerrak is observed regularly once a month. The decadal mean temperatures in the deep water (150 m) along the Norwegian coast and in the Skagerrak were quite stable in the period from 1950 to 1990. The mean decadal temperature in this period was about 7.2^{o}C in the Skagerrak and along the Norwegian West coast. In the coastal areas off Northern Norway the mean temperature was reduced to 6.1 ^{o}C outside Lofoten (station Eggum) and to 4.7 ^{o}C close to the North Cape (station Ingøy). In the 1990`s the decadal mean temperature in the deep coastal water increased considerably and temperatures in the first part of 1990`s were the highest observed since observations along the Norwegian coast started in 1936. The temperature anomaly in 1990`s was closely connected to an increase in the Atlantic inflow to the Norwegian Sea and warm winters (high level of North Atlantic Oscillations - NAO).
After a certain temperature decrease in the late 1990`s the temperatures again increased to the same high levels as in early 1990`s in the deeper layer of the coastal waters. In 2000 - 2005 the mean temperature in the deep water along the coast from Skagerrak to the North Cape was 0.7-1.0 ^{o}C higher compared to the period 1960 - 1989. The mean temperature increase 2000 - 2005 related to the standard deviation 1960 - 89 (diffT/stdev) was considerable and varied between 1.2 and 2.1, with the highest value at station Ingøy.
In contrast to the situation in the 1990`s, the NAO - index and the inflow of Atlantic water has been approximately normal between 2000 and 2005. The relatively high temperatures along the Norwegian Coast from the Skagerrak to the Barents Sea must then have another explanation and are probably connected to increased inflow from the warmer easterly branch of the North Atlantic current.

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